## Claims

[c1]

What is claimed is:

1. A wireless RF module for an MRI apparatus, the wireless RF coil module comprising:

a modulator configured to modulate a carrier signal with an MR signal in an RF coil of the MRI apparatus;

a transmitter configured to transmit the modulated signal; and a receiver wirelessly connected to the transmitter and configured to receive the modulated signal for subsequent data processing and image reconstruction.

[c2]

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2. The module of claim 1 wherein the modulator is further configured to amplitude modulate the carrier signal.

[c3]

3. The module of claim 1 wherein the carrier signal has a frequency between approximately 300 MH  $_{\rm Z}$  to approximately 3 GH  $_{\rm Z}$  .

[c4]

4. The module of claim\1 wherein the receiver is located remotely from the MRI apparatus.

[c5]

5. The module of claim 1 wherein the receiver includes an electric dipole antenna.

[c6]

6. The module of claim 1 wherein the transmitter is further configured to transmit the modulated signal out of a bore defined by a magnet assembly of the MRI apparatus.

[c7]

7. The module of claim 1 incorporated into a kit and configured to retrofit an existing MRI apparatus to wirelessly transmit the MR signal from a receive coil of the MRI apparatus to a receiver configured input the received MR signal to a data processor for processing and image reconstruction.

[c8]

8. An MRI apparatus comprising:

an MRI system having a number of gradient coils positioned about a bore of a magnet to impress a polarizing magnetic field;

an RF transceiver system; and

an RF coil assembly configured to wirelessly transmit an MR signal to the RF



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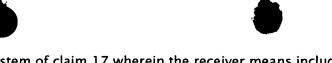
means for reconstructing at least one image of the subject from the signals

received by the receiver means.

[c20]

[c21]

[c22]



[c18]	\ 18. The MRI system of claim 17 wherein the receiver means includes means for
	wirelessly receiving the signals transmitted by the means for wirelessly
	tkansmitting.

- [c19] 19. The MRI system of claim 17 further comprising means for acquiring power for components of the MRI system from a B field associated with an RF transmit pulse sequence from the means for exciting nuclei in the subject.
  - 20. The MRI system of claim 19 further comprising means for rectifying induced voltage generated during excitation of nuclei in the subject.
    - 21. The MRI system of claim 20 further comprising at least one battery and means for charging the at least one battery from the induced voltage.
    - 22. The MRI system of claim 17 further comprising means for improving SNR.